COMMISSION ON TEACHER CREDENTIALING
Ensuring Educator Excellence

PRESS RELEASE

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Three New Programs for Mathematics Teachers Approved by the Commission on Teacher Credentialing

SACRAMENTO – As California continues to address critical shortages of fully credentialed mathematics teachers, the recent action of the Commission on Teacher Credentialing adds to the number of available subject matter preparation programs in mathematics. Prospective teachers of mathematics now have three additional options available for completing their subject matter competency requirement.

At its April 10, 2008 meeting at the Riverside County Office of Education, the Commission approved the following new subject matter programs in mathematics:

- California State University, East Bay (Hayward, CA)
- San Francisco State University (San Francisco, CA)
- Vanguard University (Costa Mesa, CA)

Over the next decade, school districts will face teacher shortages in all subject areas due to large-scale teacher retirements. Shortages in mathematics, science, and special education continue to be the most severe. Universities and local school districts continue to identify ways to fill the gap and to meet local needs. One way to ensure that teachers are available to teach the needed subject areas is for universities and local education agencies to offer more subject matter programs for teaching credentials.

All subject matter programs are based on specified criteria and standards and are reviewed by a panel of experts in the subject. The expert panel is made up of representatives of K-12 public schools and university faculty. The review process includes early technical assistance, review, and requests for additional information or suggestions for program changes. When the program meets the criteria and standards, the panel recommends approval to the Commission.

Single subject teaching credentials authorize teaching the subject named on the credential in a "departmentalized" setting. Single subject teaching credential candidates may meet the subject matter requirement by completing an approved subject matter program or by passing a Commission-approved subject matter examination. The approved subject matter programs are part of an academic baccalaureate program and consist of approximately 45 semester units. Teachers must also complete all other credentialing requirements such as student teaching.

Attached are descriptions of how each program is meeting its regional educational concerns and contact information for a more detailed program description.

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NEW MATHEMATICS SUBJECT MATTER PROGRAM DESCRIPTIONS
Approved by the Commission on Teacher Credentialing
April 10, 2008

California State University, East Bay: Mathematics
This subject matter preparation program in mathematics is designed to provide a deep understanding of the mathematics specified in the state mathematics content standards and the mathematics curriculum framework and beyond. Students who successfully complete the program will be well prepared to teach the content in the K-7 strands and the disciplinary content covered in the 8-12 standards. To ensure that students have a strong background in the subjects they will be teaching, the program includes courses that prepare students mathematically in the areas of algebra, geometry, trigonometry, mathematical analysis, linear algebra, probability, statistics and calculus. The program is designed with sufficient additional coursework to ensure that the students have competency and knowledge substantially beyond that expected in the courses taught in the high school.

The Department of Mathematics and Computer Science at California State University, East Bay is committed to providing an academically rigorous and intellectually challenging subject matter preparation program. The goal is that students who complete the program will have:

- a solid background in the mathematics sufficient for teaching in California schools as specified in the state content standards and framework,
- field experience in a local high school math classroom which prepares them for teaching in a diverse classroom setting,
- sufficient understanding of mathematics to enable them to continue to learn new mathematics and to respond to students with special needs and future curricular changes,
- exposure to a variety of models of instruction which accommodate diverse learning styles,
- lifelong enthusiasm for mathematics and other intellectual activity, including the integration of knowledge and the application of scholarship to practical problems, and
- experience communicating mathematics verbally and in written form through formal presentations and papers and through informal discussions.

For further program information please contact: Kathy Hann, Professor, Department of Mathematics and Computer Sciences, (510) 885-3887 or kathy.hann@csueastbay.edu

San Francisco State University: Mathematics
The underlying philosophy of this program is to provide prospective mathematics teachers with the subject matter preparation needed to teach effectively and consistently with current California requirements. The program, which includes rigorous coursework and practical field experience, emphasizes mathematical reasoning and problem solving, connections among mathematical concepts, technology, and communication skills. The Department of Mathematics and the Department of Secondary Education designed the program after considering the needs of prospective mathematics teachers as reflected in the *Mathematics Content Standards for California Public Schools: Kindergarten Through Grade Twelve*, the *Mathematics Framework for California Public Schools: Kindergarten Through Grade Twelve* and the *Standards of Program Quality and Effectiveness*.

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Prospective mathematics teachers who complete the program will have a strong foundation of subject matter knowledge, be able to use mathematical and statistical software as a tool for understanding concepts and solving problems, and be able to communicate mathematics effectively both orally and in writing.

The program coursework enables prospective mathematics teachers to learn core concepts from an advanced viewpoint. The program coursework requires prospective mathematics teachers to learn mathematics in a variety of ways, explore connections between mathematical concepts, and develop analytical skills. Prospective mathematics teachers in the program develop their mathematical reasoning skills, explore connections among branches of mathematics, and have opportunities for problem solving and mathematical communication.

For further program information please contact: Robert Marcucci, Professor, Department of Mathematics, (415) 338-2661 or marcucci@math.sfsu.edu

Vanguard University: Mathematics

Students in this program receive mathematical training to prepare them for careers in elementary or secondary education. The basic theories and principles of mathematics are studied as well as their applications. Students are required to take a full year of calculus-based physics. While lower division coursework is designed to develop the foundations of mathematics, the upper division coursework extends the subject matter learning and prepares students for continued development during professional teacher preparation and induction programs.

The instructional formats and uses of technology in the program were selected for the appropriate content taught at the different grade levels in California middle and secondary schools, including algebra, geometry, history of mathematics, number theory, statistics and probability, and calculus. The varied instructional strategies modeled for prospective teachers covers the many possibilities for instruction in K-12 schools.

The philosophy of the program has the express purpose to prepare students for an academic teaching career. Candidates are prepared to teach mathematics so they can demonstrate the following qualities of effective teaching: effectual communication skills, good attitude toward students, knowledge of subject (conceptually, historically, and for application), strong organization, enthusiasm, fairness, flexibility, ability to encourage students to think for themselves, and an ability to stimulate learning experiences. The program seeks to develop teachers who are:

- practicing, qualified mathematicians,
- learning guides enhancing student's mathematical curiosity,
- socializing agents for mathematical interaction,
- facilitators promoting mathematics learning,
- role models expressing excitement in the mathematical field, and
- persons possessing high morals and ethics.

For further program information please contact: Roy Young, Chair, Department of Mathematics, (714) 556-3611 or ryoung@vanguard.edu

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